

# Automatic Solid-Liquid Extractor

## Model L-806



# USER MANUAL

**Beacon Innovation International Inc.**

[Http://www.Biii.ca](http://www.Biii.ca)

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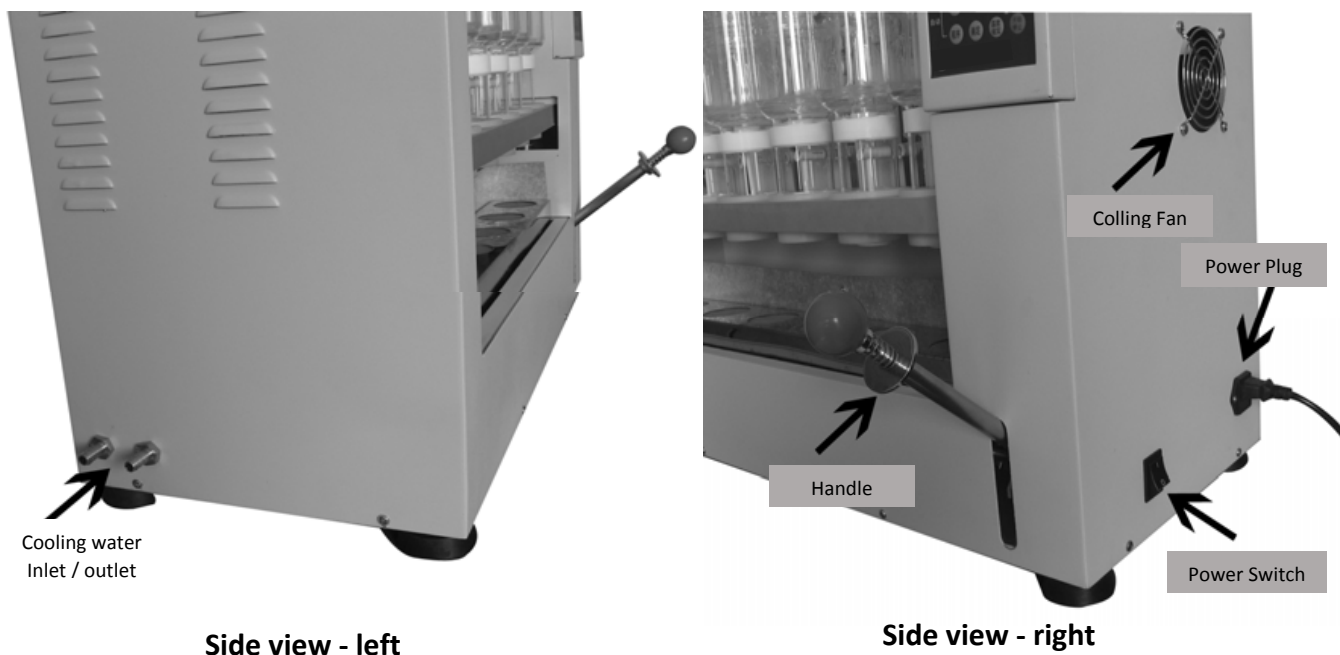
## 1. Introduction

The L-806 automatic solid-liquid extractor adopts the highly efficient Soxlet hot extraction approach. It can widely be used in various situations of solid-liquid extraction: such as food analysis, lipid amount determination of drinks, textile analysis, and analysis of pulp, packaging material, solvable matter of soil, etc.

### Features:

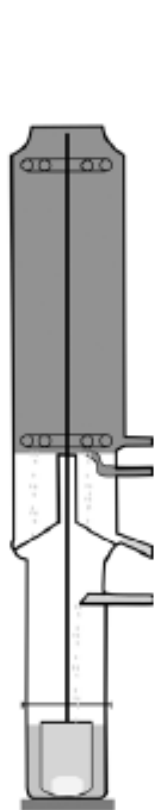
- The hot extraction method meets AOAC official standard.
- Full automatic program control, without human attention.
- Manual operation is possible at any step.
- 6 samples, 24-hour continuous operation.

The design of L-806 automatic solid-liquid extractor has taken full accounts of various operation requirements, and is outstanding for its direct control, flexibility and convenience. It can store up to 99 editable programs and run according to the selected program. Manual intervention / operation is allow in any step during a programmed run.

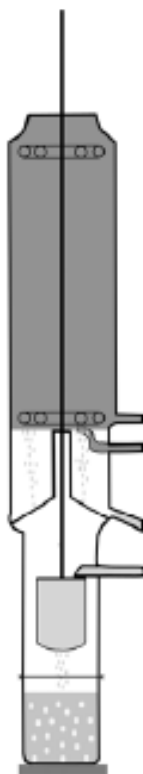


All parts in the extraction system are made of inert materials. They can resist corrosion of various organic solvents, ensuring the accuracy and purity of results.

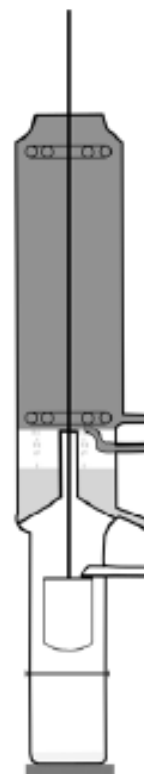
## Sample Basket



**Step 1**



**Step 2**



**Step 3 & 4**

There are four steps in the hot extraction process:

Step 1. Hot extraction: Samples are immersed in the solvent and heated together for extraction.

Step 2. Rinse: Either continuous or intermittent rinse with distilled / recycled solvent. The rinse time, amount of solvent, or the time interval of intermittent rinse, may be set as desired.

Step 3. Solvent recycling: Solvent is distilled and vapor is condensed, collected in the solvent chamber.



Step 4. Drying: The extraction is distilled and dried in the sample cup. The system will stop heating and issue warning when drying time is up.

## 2. Operation of Front Panel (L-806)



### 2.1 Operation and setting at power on

1. Rinse valve may be turned on at any time, by pressing the **ON** or **OFF** key.
2. The sample baskets may be rise up or lowered down at any time, by pressing the **▲** or **▼** key.
3. The temperature may be set as needed, by pressing the **Tmp. Set** key. Pressing the **▲** or **▼** key to desire temperature, then press the **Tmp. Set** key again to confirm and set.
4. Create or edit a program:
  - 1) Select a program number from **01** to **99**.
  - 2) Press the **PROG** key to start program, the flashing digit may be edited.
  - 3) Press the **▶** or **◀** key to move to next digit, press the **▲** or **▼** key to change the value.
  - 4) Press the **OK** key to save the program.
5. Programing demo
  - 1) Press the **PROG** key, the program # digit is flashing. Select program number **01**.
  - 2) Press the **▶** key, the "Hot Extraction" position is flashing. Set minute time position as **30**. Press the **▶** key, set hour position as **02**. The hot extraction time is now set as **02:30** (2 hours 30 minutes).
  - 3) Press the **▶** key, the "Cont. Rinse" position is flashing. Set continuous rinse time as **01:30** (1 hour 30 minutes).
  - 4) Press the **▶** key, the "Intm. Rinse" position is flashing. Set intermittent rinse time as **02:30** (2 hours 30 minutes).
  - 5) Press the **▶** key, the "Wait Btn Rinse" position is flashing. Set the waiting time between rinse as **00:45** (45 minutes).
  - 6) Press the **▶** key, the "Drying" position is flashing. Set the drying time as **01:20** (1 hour 20 minutes).
  - 7) Press the **OK** key to save the program.
  - 8) Press the **Tmp. Set** key, set extraction temperature as **060** (60 °C).
6. To choose a saved program, press the **PROG** key, and then use the **▲** or **▼** key to select the program number, press the **OK** key to confirm selection.




## 2.2 Automatic program control

- 1) Edit or select a program as described in previous section.
- 2) Press the **Tmp. Set** key, check or change the temperature setting, and confirm the setting.
- 3) Press the  key under sample basket and place the sample into the basket.
- 4) Press the  key to raise the sample basket. Place the extraction cup (filled with solvent) onto the heating plate at the bottom of the extraction chamber.
- 5) Depress the handle located at the right side of the equipment, to seal the extraction cup.
- 6) Turn on cooling water.
- 7) Press the **Start/Stop** Key, to start program run.
- 8) Once the program is complete, the system issues warning and stops heating.
- 9) Press the **Start/Stop** Key to cancel the warning, and resume displaying the program.

## 2.3 Manual Operation

- 1) Select program number **00**, this is the default program for manual mode.
- 2) The Sample basket  or  key can be operated as needed.
- 3) The rinse valve **ON** or **OFF** key can be operated as needed.
- 4) The temperature can be set as needed by pressing the **Tmp. Set** key.
- 5) Extraction heating can be turned on or off by pressing the **Start/Stop** Key.

### 3. Operation Procedure

- (1) Load sample to be extracted into a cylinder made of filter paper.
- (2) Place the loaded paper cylinder into the sample basket.
- (3) Turn on the main power switch.
- (4) Press the Sample basket  or  key to lower the basket to the lowest position.
- (5) Place the basket onto the basket sit. The basket and the sit are kept together by magnet.
- (6) Press the Sample basket  key, raise the sample basket to the highest position.
- (7) Place the extraction filled with solvent onto the position on the heating plate.
- (8) Lightly depress the handle, adjust the extraction cup position so the cup opening fits well with the sample basket above, and then depress the handle fully to lock in.
- (9) Turn on the cooling water valve (or circulation pump), cooling water flows through the curly cooling tube.
- (10) Edit or select a saved program, press the **Start/Stop** key to start the program.
- (11) Once completed, press the **Start/Stop** key to turn off the warning whistle. While holding the extraction cups with a 6-parallel-clamp, open the handle lock and lift the handle slightly, remove the extraction cups. The extraction product in the cups can be examined or sent to further test.
- (12) Install back a clean set of extraction cups, depress the handle and lock in. Press the rinse valve **ON** key, to empty the solvent in the solvent chamber.



## 4. Specification

- Control mode:
  1. PID control, touch key, LED display.
  2. Power lift of sample basket, electronic control of rinse valve.
- Temperature range: 20°C ~ 280°C
- Temperature accuracy:  $\pm 1^{\circ}\text{C}$
- Extraction cup volume: 90 mL
- Overall Power consumption: <2000W
- Power source: 220V/50Hz
- Net weight: 45 kg
- External dimension (mm): (L) 660 (water sprout +40) x (W) 350 (Handle +190) x (H) 850